

Serial No.: 09/556,280

-5-

Art Unit: 2877

**Interview Summary**

The Applicants thank Examiner Rosenberger for the courtesy extended during the in-person interview on March 11, 2003. During the discussion, Applicants explained the operation of a prototype device and how it differed from the prior art. Applicants also discussed some advantages the device may exhibit and comments received from users of the device in the marketplace. The Liang reference and its relevance to the claims was also briefly discussed. Applicants also discussed the concept of each pending independent claim and how it distinguished from the prior art. In particular, Applicants discussed the following concepts:

- An authentication device for authenticating a mark that is of any desired pattern.
- An authentication device that calculates a ratio of intensity or wavelength and compares the ratio to a standard.
- An invisible mark that is viewable only through the display of the device.
- A device that displays both the data representative of the detected light emission of the light-sensitive compound in the mark and the authentication signal.

Further, Applicants presented another concept and was invited by the Examiner to present it in this Supplemental Amendment. The concept, relating to a tuned light-source, is now claimed in new independent claim 149 presented herein.

**New Claim 149**

Claim 149 has been added and is directed to a device comprising, *inter alia*, an excitation light source adapted to emit light substantially at the at least one predetermined excitation wavelength to excite the at least one light-sensitive compound. Support for this claim is found, for example, on page 8, lines 17-19.

As discussed during the interview, the device includes a light-source that is tuned to produce light at a specific wavelength; that is, one that is capable of exciting

Serial No.: 09/556,280

-6-

Art Unit: 2877

the light-sensitive compound on the product or package. Because the light source emits light at a desired wavelength, several advantages may be realized. Although these advantages are listed here, the present invention is not limited in this respect as none of the below listed advantages need be present. Further, other advantages may be realized. That said, the advantages that may be realized include:

1. Lower energy consumption because there is no need to produce a broad spectrum of light. Thus, the light-source may be battery powered.
2. Filters may be unnecessary. Because the light incident on the light-sensitive compound is produced at the desired wavelength, there may be no need to filter the light prior to irradiating the compound.
3. Without extraneous light emitted from the light source, the signal-to-noise ratio may be reduced. That is, because the light source emits at a desired wavelength, the likelihood that the device would detect light from the light source believing it to be light emitted from the light-sensitive compound is reduced. Simply stated, the light source does not emit light in the range that is detected by the detector and therefore there may be no excitation light contaminating the emission or absorption from the light-sensitive compound.
4. Detection of reflected excitation light may be minimized. That is, the background may be excitable at various wavelengths, but because the light source emits at a desired wavelength, the likelihood of exciting the background may be reduced and therefore the device may not be faked into detecting background light emission or absorption as emission or absorption from the light-sensitive compound.
5. The number of usable wavelengths for authentication may be increased. That is, because the device can specifically excite at a very narrow range, there may be less overlap, potentially allowing different users of the device to use a light source that emits light at a wavelength specific to the light-sensitive compound that they employ.

•  
•  
•  
•

6. Allows use of ratio-metric authentication routines. When ratio metric analysis is employed, the wavelengths being detected may be close to each other. If a light source tuned to produce light at a specific wavelength were not used, the detected light would more likely to be a combination of reflected excitation light, actual emission or absorption of the light-sensitive compound, and unwanted emission or absorption from other compounds on the substrate.

Because the prior art of record fails to teach or disclose, *inter alia*, an excitation light source adapted to emit light substantially at the at least one predetermined excitation wavelength, new claim 149 patentably distinguishes the art of record. Claims 150-168 depend directly or indirectly from claim 149 and are patentable for at least the same reason.

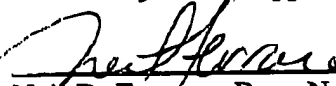
### CONCLUSION

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicants' attorney at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicants hereby request any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,

*McInerney et al*, Applicants



Neil P. Ferraro, Reg. No. 39,188  
WOLF, GREENFIELD & SACKS, P.C.  
600 Atlantic Avenue  
Boston, MA 02210  
(617) 720-3500

FAX RECEIVED

March 17, 2003 MAR 17 REC'D